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Director/Sr. Electrical Engineer
System Architecture, Firmware Development
ASIC Integration and Mixed Signal Design

The Technical Expertise and Dependable Leadership for Your Team

Keywords: resourceful, enthusiasm, proficiency, entrepreneurial *

OBJECTIVE:

- Lead a dynamic engineering group that dramatically and positively impacts the core company;
- Be able to share and utilize my technical expertise to build innovative systems;
- Develop successful products and execute plans to completion;

EXCELLENCE:

18+ years of silicon experience	Extensive knowledge of technology capability
17 years in international environments	Smooth world-wide program management
13 years of team leadership	Pedagogy & communication skills
4 years of teaching in Universities and schools	Great listening & human skills

EMPLOYMENT HISTORY

- *Spatial Photonics* 2006-2008
Senior Electrical Engineering Manager **LED Projectors and Embedded Display**
 - Managed the Electrical Department group and directed the System Architecture team;
 - Led the development and manufacturing of small footprint video projectors, micro-mirrors device drivers, test / characterization equipment, and yield analysis tools;
 - Developed demonstration and reference design boards in record time using Xilinx platforms and various illuminations: LED, UHP / color wheel and laser;
 - Launched the high quality imager design, ASIC controller and reliable panel backplane;
 - Deployed “Design in Predictability” methodology: ensured production manufacturability and repeatability;
 - Identified and fostered key innovations leading to multiple patents;
 - Implemented a company document control system and a document portal.
- *Reflectivity* 2003-2006
Senior Design Engineer **Image Quality Algorithm / Projector and Display Products**
 - Designed, developed and tested flexible micro-mirror projector platforms;
 - Contributed in the MEMs based imager CMOS backplane design;
 - Implemented flash-based and FSM-based PWM sequencers;
 - Launched “ReModel” project, architect underneath algorithm for sequence generation and provided support to joint developers;
 - Contributed in color wheel optimization for business projectors and HDTV (2x 3x and 4x)
 - Established customer product qualification procedures & provided support for systems with color-wheel before or after the Light Tunnel;
 - Proposed and demonstrated a low cost screen-door removal mechanism;
 - Proposed, implemented and validated innovative mechanisms to improve final product quality;
 - Developed:
 - “ReCreateTM” technology for dual mode projectors with HDTV resolution enhancement;
 - Modules to increase image quality on low cost FPGA with limited RAMs;
 - A 4 position optical actuator hardware targeted for a 1080p system;
 - New algorithms for better efficiency and image quality - used computational intelligence to converge

towards the best system tradeoff;

- Designed arithmetic operators to suppress non-linearity and moiré generated by interpolation / rescaling (SQRT and divider);
- Developed innovative solutions that do not infringe competition patents, (white boost, blue noise dither, contrast enhancement, overlapping pixels, 4x wobulation etc.);
- Led a cost reduction effort and started a ASIC to FPGA migration using Magma;
- Delivered CES XGA and 720p systems.

➤ *Orient Direct*

2003

ASIC Design Engineer

Hardware DCT / Imaging Consumer Products

- Designed video products in a startup environment;
- Concept to production task development including: Mathematica modeling, Verilog coding, FPGAs prototyping, custom made board development, Lab validation, instrumentation, software firmware development, flow and methodology deployment, and intensive perl scripting;
- Acquired knowledge: image processing, sensors, Hardware DCT, JPEG compression, irDA, SDIO, USB, I2C, SMPS, switching DC converter, battery technologies, and inductive chargers.

➤ *APT Technologies*

2001-2002

Mixed Signal Design Manager

Serial ATA / High Speed IOs and Switches

- Directed the APT Technology Analog Design Group;
- Conducted digital and analog design of high-speed interfaces and mixed-signal integrated circuits for storage servers (SAN/NAS) along with serial-ATA products: PCI bus adapters, routers and gigabit SERDES;
- Prototyped serial-ATA Host bus Adapter and Routers enabling very Low cost solution in the RAID and SCSI arena using FPGAs;
- Provided Electrical Design Automation, full custom design of analog filters, amplifiers, voltage references, and signal detection using Cadance tools; SPICE simulation, layout design, chip integration, verilog coding, modelsim simulations, leonardo synthesis, place-and-route, and optimized script development using Artificial Intelligence technology to explore the design space.

➤ *Infineon Technologies*

1999- 2001

Design Engineering Manager

System on Chip Integration

- Supervised HDD design activities in the Computer and Networking Peripheral Department;
- Managed internationally distributed design-engineering teams;
- Launched a 3 chip cost effective HDD-solution program integrating Read-Write Channel (750MHz) and embedded DRAM with HDD controller;
- Directed speed and cost optimized system and controller architecture;
- Directly contributed in technically challenging modules like CPU cores, MAC, controllers, serial interfaces, and analog modules.

➤ *Texas Instruments*

1995-1999

Digital Design Team Manager 1997-1999

RW Channel Design

- Mentored group design activity by establishing methodology and procedures that ensured a high-level quality product using state-of-the-art tools;
- Designed HDD (700MHz) high performance architectures (Viterbi decoder) and fast arithmetic units.

Electrical Design Team Leader 1995-1997

Wireless Application VLSI Design

- Took full ownership of DSP+ARM mega-modules electrical design (tremendous success: 220M units);
- Globally promoted an electrical "know-how" throughout the team and various organizations;
- Defined the design strategy for new wireless product generations by providing specifications, end-user guidelines, tools, flows and trainings;
- Participation in the cost reduction definition process and advanced libraries via technology steering committee

membership.

- **BULL S.A.** 1990-1994
IC Design Engineer **High-Speed Datacom ASIC for Low Cost Parallel Machines**
- Pioneer in using Delay Locked Loop for clock recovery and full digital PLLs;
 - Designed and architected various mixed-signal complex circuits: a 0.5u CMOS prototype for 1.2Gb/s serial link compatible IEEE 1355, a 0.8u packet-switching router 8Gbps, super scalar RISC micro processor, and a delta-sigma audio-band analog to digital converter (TMS320AD50);
 - Designed key modules: asynchronous FIFOs, registers banks, Digital PLLs, and a 32b execution unit (VLIW)

EDUCATION:

- **Ph.D.** University Pierre & Marie Curie (France) 12/94,
- **Engineering Degree** Superior Institute in Electronics of Paris (France) 7/91,
- **Master of Science in Electrical Engineering** University of Paris 6 (France) 9/91,
- Training Hard Drive & Servo Infineon Corp. (Singapore) 1/01,
- Low-Power/Low-Voltage IC design Superior Institute of Technology of Lausanne (Switzerland) 7/95.

EXTERNAL RECOGNITION:

Papers: TITJ 1Q99, JSSC July 96 V31 N7 p.95, ESSCIRC Sept 95, JICAM Dec 93.
Lectures: ISEP Professor (1990–1993), EPITA (1994), EPFL and UniNE Lecturer: Switzerland (1999, 2001)

Patents: 13 patents pending, 18 disclosures:

- Sequential color modulation method in display system (US 20050195137A1)
- Image dithering based on Farey's fractions (D#:18529-060001 SP056)
- Deflection Mechanisms in Micro-mirrors devices (US 7,215,458 May-07)
- Color rendering of illumination light in display systems (US 7,131,762 Nov-06 & US7,212,359 May-07)
- Image projection method and projection system (US 20060250587 Nov-06)
- Method of repairing micromirrors in spatial light modulators (US 20060193029 Aug-06)
- Sequential color illumination in display systems employing light modulators (US 20040155856A1 Aug 04 & US 20050195137 Sep-05)
- Maximum likelihood sequence estimation (US 6,212,664 Apr-01)
- Variable Delay Element (US 5,327,031 Jul-94)

Board of directors: Industrial representative at ICF 97
WW bodies: Contributor in the European Open Microprocessor System Initiative (1991-1994)

MISCELLANEOUS:

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